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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,902

06/28/2006

Tooru Serizawa

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08/24/2010

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1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ARCIERO, ADAM A

ART UNIT

PAPER NUMBER

1795

NOTIFICATION DATE

DELIVERY MODE

08/24/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/584,902	Applicant(s) SERIZAWA ET AL.	
	Examiner ADAM A. ARCIERO	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 4-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/28/2006; 07/02/2007; 09/07/2007; 02/27/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

SEPARATOR FOR FLAT-TYPE POLYMER ELECTROLYTE FUEL CELLS

Examiner: Adam Arciero

S.N. 10/584,902

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August 17, 2010

Election/Restrictions

1. Applicant's election of Group I, claims 1-3, without traverse in the reply filed on June 14, 2010 is acknowledged. Thus, claims 4-14 are withdrawn from consideration.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to Claim 1, the claim is drawn to "a separator for a flat-type polymer fuel cell" (a singular separator), however the body of the claim is drawn to a fuel cell comprising a plurality of unit cells, wherein each unit cell comprises two separators. The claim further limits the structure of how the separators of separate unit cells are joined together. It is unclear to the Examiner if the Applicant's invention is drawn to a singular fuel cell separator or a fuel cell stack comprising an arrangement of unit cells and their respective separators. For the purposes of compact prosecution, the Examiner is construing the claim as reciting a flat-type polymer

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electrolyte fuel cell comprising unit cells arrayed in flat configuration, wherein each unit cell comprises a fuel-feed side separator and an oxygen-feed side separator.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Maeda et al. (WO 03/098726 using US 7,316,856 B2 as an English equivalent).

As to Claim 1, Maeda et al. discloses a separator for a flat-type polymer electrolyte fuel cell comprising unit cells arrayed in flat configuration, having both a fuel-feed side separator and an oxygen-feed side separator (Fig. 6b). Maeda et al. further discloses wherein said separators comprise collector portions having a plurality of conductive substrates **10** arrayed in a flat configuration via gaps **16** (Fig. 2b). Furthermore, said separators comprise a pair of insulating frames which sandwich the collector portions therebetween (Fig. 12). Said gap **16** clearly separates the collector portion into separate conductive substrates. Said conductive substrates of the fuel side separator and oxygen side separator are joined together by means of a connecting hinge **41** (Fig. 6c).

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Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (WO 03/098726 as found in IDS, using US 7,316,856 B2 as an English equivalent) in view of Hayashi et al. (US 2002/0146610 A1).

As to Claim 3, Maeda et al. does not specifically disclose wherein the unit conductive substrates that form the collector portion in the fuel and oxygen side separators, comprise electrode terminals which are positioned at ends of the respective array directions and to which the connecting hinges are not connected.

However, Hayashi et al. discloses a fuel cell comprising fuel and oxygen side separators, each including terminals which are not in connection with any connecting hinges (paragraph [0110] and Fig. 2). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the fuel cell separators of Maeda et al. with terminals, because Hayashi

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et al. teaches that a closed circuit for outputting power of the fuel cell is formed via said terminals and a vehicle and external load can be driven by said power outputted from said terminals (paragraph [0110]). Furthermore, according to MPEP 2144.04, the placement for the terminals on the separator is just a simple rearrangement of parts which would not have modified the operation of the prior art device disclosed by Maeda et al. and Hayashi et al.; “*In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device).”

Allowable Subject Matter

9. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 2 is allowable over the prior art because the closest prior arts of record, Maeda et al. and Hayashi et al. do not teach or suggest a fuel cell stack comprising unit cells having a fuel and oxygen side separators, wherein said separators comprise at a corner a lug member that juts toward an adjoining unit conductive substrate, the second to nth unit conductive substrates of another separator each include at a corner a cutout that is in alignment with said lug member of a unit conductive substrate adjacent to an upstream side of the array direction and configured in such a way as to form a gap with said lug member, wherein at the lug members a hinge is provided that juts in a direction orthogonal to the array direction of the unit conductive substrates and the second to nth unit conductive substrates of another separator are joined to said lug members by means of the connecting hinges.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM A. ARCIERO whose telephone number is (571)270-5116. The examiner can normally be reached on Monday to Friday 8am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Adam A Arciero/
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795